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(FILE 'HOME' ENTERED AT 18:50:57 ON 07 JUL 2006)

L1 FILE 'CAPLUS, USPATFULL' ENTERED AT 18:51:04 ON 07 JUL 2006
25431 S (TREAT? OR CONTACT?) (3A) SEED

L2 FILE 'REGISTRY' ENTERED AT 18:51:32 ON 07 JUL 2006
1 S PERMETHRIN/CN

L3 FILE 'CAPLUS, USPATFULL' ENTERED AT 18:52:09 ON 07 JUL 2006
8492 S PERMETHRIN OR L2
L4 35 S L3 (P) L1
L5 6 S L4 (P) (CORN OR MAIZE)
L6 16 S L4 AND (CORN OR MAIZE)
L7 10 S L6 NOT L5
L8 19 S L4 NOT L6
L9 884967 S CORN OR MAIZE OR SOY? OR RYE OR SUNFLOWER OR SUN FLOWER OR TO
L10 210410 S WHEAT OR BARLEY
L11 1000667 S L9 OR L10
L12 14 S L11 (P) L4
L13 8 S L12 NOT L5
L14 26 S L11 AND L4
L15 12 S L14 NOT L12
L16 2 S L15 NOT L6

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L13 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:627294 CAPLUS
DOCUMENT NUMBER: 125:268012
TITLE: Innovative strategy involving judicious pesticide management to control pests of sorghum in India
AUTHOR(S): Gahukar, R. T.; Kishore, Prem
CORPORATE SOURCE: Division Entomology, Indian Agricultural Research Institute, New Delhi, 110012, India
SOURCE: Journal of Entomological Research (1995), 19(4), 301-312
CODEN: JEREDP; ISSN: 0378-9519
PUBLISHER: Malhotra Publishing House
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 50 refs. Sorghum bicolor (L.) Moench. is the third important cereal crop after rice and wheat in India. It is heavily ravaged by a number of key pests. At present, the sorghum shootfly, *Atherigona soccata* (Rondani); stem borer, *Chilo partellus* (Swinhoe); sorghum midge, *Contarinia sorghicola* (Coquillett); and sorghum earhead bug, *Calocoris angustatus* Lethiery are key pests of sorghum which either individually or collectively seriously limit the productivity of newly developed cultivars. The main thrust in the control of these key pests and other pests was directed towards the use of insecticides. A large number of insecticides belonging to different groups starting from chlorinated hydrocarbons to synthetic pyrethroids were used against these pests in different formulations (dust, spray, granules, etc.) with different modes of applications, viz., seed treatment, soil furrow application at sowing, side-dressing after crop emergence, foliar sprays and dusts, leaf whorl placement of granules, dusts and sprays, etc. Some of the insecticides used for their control are DDT, BHC, lindane, endrin, phorate, trithion, parathion, dimethoate, phenthoate, phendol, carbaryl, monocrotophos, malathion, endosulfan, cytolane, carbofuran, aldicarb, mephosfolan, ~~disulfoton~~ sevimol, diazinon, fenitrothion, chlorpyrifos, cypermethrin, ~~permethrin~~, fenvalerate, chlorfenvinphos, etc. These included even outdated insecticides, though earlier spectacular success was achieved. Complete reliance on insecticides due to their broad spectrum biol. activity and associated risks circumvents their use. This situation has led to develop integrated pest management strategies in sorghum where each control component has to play an important role. Quantities of insecticides can be reduced to economic level by integrating their use with resistant varieties like P 311, SPV 1015, P 37, P151, E 601, biocontrol agents and cultural practices. Determination of economic thresholds for different key pests is desirable both to realize maximum benefit of chemical control and to reduce the number of applications. Seed treatment with carbofuran (5 parts of a.i./100 parts of seed) resulted in successful control of shootfly. Two applications of endosulfan (4% dust) at 5.0 and 7.5 kg/ha used 25 and 35 days after germination were effective as also more economical than those applied 20, 30 and 40 days after germination in controlling the stem borer. With this schedule, the rate of application of endosulfan was reduced to 12.5 kg/ha from 22.5 kg/ha of com. formulation. Foliar and earhead pests were successfully controlled by applying 1 L of endosulfan in 500 to 600 L of water at 50% flowering as foliar and earhead spray. Application of insecticides at vulnerable stage of pests helps in reducing the quantity of insecticides and effectively checking the pests. Hazards of pollution, residues and effects on non-target organisms can also be avoided. Thus, the hitherto misuse or overuse of insecticides will not only be checked but will also effectively halt the ever increase of various problems associated with pesticides. In future, control programs in sorghum with proper and judicious pesticide management should provide the solution to intricate and complex problems of this crop.

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L13 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:45690 CAPLUS

DOCUMENT NUMBER: 106:45690

TITLE: Chemical control of wheat bulb fly (*Delia coarctata*) attacking winter wheat in eastern England, 1969-1981.

I. Insecticidal seed treatments

AUTHOR(S): Maskell, F. E.; Gair, R.

CORPORATE SOURCE: Agric. Dev. Advis. Serv., Cambridge, CB2 2DR, UK

SOURCE: Annals of Applied Biology (1986), 109(2), 223-36

CODEN: AABIAV; ISSN: 0003-4746

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Dry powder, liquid and microencapsulated formulations of organophosphate and synthetic pyrethroid insecticidal seed treatments were

tested as possible alternatives to the standard organochlorine seed treatments for autumn-sown wheat in mineral and organic soils heavily infected with wheat bulb fly eggs and (subsequently) larvae. Retention of insecticides on the seed coat varied from 40 to 120% of the target dose; it was usually good when microencapsulated formulations were used. Chlorfenvinphos [470-90-6], fonofos [944-22-9], isofenphos [25311-71-1] and triazophos [24017-47-8], each applied at 2.0 g/kg seed, were phytotoxic, the symptoms varying from a slight delaying effect upon germination to an adverse effect upon grain yield. Chlorfenvinphos at 0.2-2.0 g/kg seed was consistently effective against wheat bulb fly larvae in both mineral and organic soils. Athidathion [19691-80-6] (0.8 g/kg), carbophenothion [786-19-6] (1.2 g/kg), ethion [563-12-2] (1.7 g/kg) and fonofos (microencapsulated formulations) at 1.0 or 2.0 g/kg were also effective in mineral and organic soils. Of the synthetic pyrethroids tested as seed treatments, permethrin [52645-53-1] gave excellent results in mineral soils at 1.0 g/kg or in synergized formulations at 0.12 or 0.24 g/kg but was disappointing in organic soils. In a single comparison of seed treatments applied to wheat sown early (14 Oct.) and late (20 Nov.), chlorfenvinphos was effective at both sowing dates whereas athidathion, ethion and pirimiphos-ethyl [23505-41-1] gave better results in late-sown wheat. A single trial compared deep with shallow sowing of treated seed. Most insecticides performed better on shallow-sown wheat, but chlorfenvinphos was equally effective against the pest at both sowing depths. Most insecticides restricted the nos. of larvae entering host plants but had little or no subsequent effect upon larval survival within attacked shoots. Fonofos and isofenphos, and to a lesser extent chlorfenvinphos, seed treatments addnl. killed many larvae within plant shoots.

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IT 309-00-2, Aldrin 470-90-6, Chlorfenvinphos 563-12-2, Ethion 786-19-6, Carbophenothion 944-22-9, Fonofos 19691-80-6, Athidathion

23505-41-1, Pirimiphos-ethyl 24017-47-8, Triazophos 25311-71-1,
Isofenphos 39515-41-8, Fenpropathrin 42509-80-8, Isazophos
52645-53-1, Permethrin
RL: BIOL (Biological study)
(wheat bulb fly control on winter wheat by
seed treatment with)

L13 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:216821 CAPLUS

DOCUMENT NUMBER: 102:216821

TITLE: Activity of avermectin in the laboratory and the field
against the boll weevil and *Heliothis* spp. on cotton
and flue-cured tobacco

AUTHOR(S): Wolfenbarger, D. A.; Johnson, A. W.; Herzog, G. A.;
Tappan, W. B.

CORPORATE SOURCE: Subtrop. Crop Insects Res. Unit, ARS, Weslaco, TX,
78596, USA

SOURCE: Supplement to the Southwestern Entomologist (1985), 7,
17-26

CODEN: SSOED3; ISSN: 0277-7878

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Based on LD50 values and confidence intervals, topical applications of
MK-936 (avermectin) [73989-17-0] and permethrin [52645-53-1] were ca. equally toxic to larvae of the
tobacco budworm, *Heliothis virescens*, but avermectin was somewhat
less toxic to the bollworm, *Heliothis zea*. Avermectin was less toxic than
azinphosmethyl [86-50-0] when topically applied in acetone to the boll
weevil, *Anthonomus grandis*, but its toxicity was greatly enhanced when it
was diluted in DMSO or cottonseed oil. Avermectin was equally toxic to boll
weevils, whether it was topically applied to the dorsum of the thorax, the
tarsus of the right front leg, or the tip of the proboscis; however, it
was significantly less toxic than azinphosmethyl in all the topical
application tests. In field tests, applications of avermectin to
cotton, at 0.14 kg/ha, at 2- to 4-day intervals, significantly
reduced the percent squares (flower buds) damaged by the boll weevil as
compared to the check. Nos. of undamaged squares and bolls in plots
treated with avermectin and azinphosmethyl were equal and significantly
greater than those in the check. Yields of seed cotton
from plots treated with these compds. were significantly greater
than those from the untreated plots. Sprays of avermectin, at 0.011-0.033
kg/ha, caused significant redns. in larval populations and damage by
larvae of the tobacco budworm on flue-cured tobacco.

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L13 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1983:193346 CAPLUS
DOCUMENT NUMBER: 98:193346
TITLE: Control of cotton bollworms with fenvalerate in India
AUTHOR(S): Agnihothrudu, V.; Gour, T. B.
CORPORATE SOURCE: Rallis Agrochem. Res. Stn., Bangalore, 560 058, India
SOURCE: Crop Protection (1982), 1(2), 231-4
CODEN: CRPTD6; ISSN: 0261-2194
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The synthetic pyrethroid fenvalerate (I; Sumicidin 20E) [51630-58-1] was tested in 64 field trials for the control of bollworms on rainfed and irrigated cotton, and I at rates of 50-150 g/ha was tested on 15 varieties of cotton, with long, extra-long, short, and medium staples. From 2 to 9 sprays were applied at intervals of 7-30 days, depending on whether the insecticide was sprayed according to a calendar-based schedule or when needed. I was compared with conventional insecticides such as carbaryl [63-25-2], monocrotophos [6923-22-4], endosulfan [115-29-7], and phosalone [2310-17-0] and also with the synthetic pyrethroids permethrin [52645-53-1], cypermethrin [52315-07-8], and deltamethrin [52918-63-5]. The percentage of bollworm-infested plants in the I-treated plots ranged from 0 to 21.8% and in the untreated plots was $\leq 100\%$. With conventional pesticides the maximum level of infestation was 97.2%. Increases in yield of seed cotton from I-treated plots over those from plots treated with conventional pesticides were 54, 57, 67, 84, and 86% over monocrotophos, carbaryl, quinalphos [13593-03-8], phosalone and endosulfan, resp., representing increases of 791-1046 kg/ha.

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L13 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1982:467743 CAPLUS
DOCUMENT NUMBER: 97:67743
TITLE: Behavior of permethrin as a seed treatment against larvae of the wheat bulb fly (*Delia coarctata* Fall.)
AUTHOR(S): Gatehouse, Diana M.; Evans, David D.; Griffiths, David C.; Scott, Geoffrey C.
CORPORATE SOURCE: Plant Prot. Div., ICI Ltd., Bracknell, RG12 6EY, UK
SOURCE: Pesticide Science (1982), 13(2), 109-18
CODEN: PSSCBG; ISSN: 0031-613X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB permethrin [52645-53-1], Applied as a seed treatment to winter wheat, was sufficiently stable to control wheat bulb fly larvae. The largest decrease in attack

by the larvae, compared with control, was in shallow-sown (2.5 cm), rather than deep-sown (7.5 cm) treatments. Expts. to study the distribution of the compound in the plant and soil, after its application as a seed treatment, showed that in shallow-sown treatments, 10-15% of the residue in the plant could be detected in the bulb, whereas in deep-sown treatments, only 2-3% could be detected in the bulb. The bulk of this residue, 142 days after planting, was the parent material, indicating that, at low soil temps., permethrin was degraded very slowly. Thus, the ability of permethrin to decrease attack by wheat bulb fly larvae may be explained by the stability of the compound at low temps. and its movement into the outer tissues or the bulb, where the larvae enter the wheat plant. The failure of permethrin to protect plants from larval attack when the seeds are deep-sown can be explained by the very small amts. of insecticide in the bulb, and the distance of the bulb from the seed.

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ST permethrin seed treatment *Delia* larva;
wheat seed permethrin treatment
IT *Hylemya coarctata*
(permethrin effectiveness against larva of, in wheat
seed treatment)
IT Wheat
(permethrin in treatment of seed of,
wheat bulb fly larva control by)
IT Seed
(permethrin in treatment of, of wheat,
wheat bulb fly larva control by)
IT 52645-53-1
RL: BIOL (Biological study)
(in wheat seed treatment, wheat
bulb fly larva control by)

L13 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1982:419001 CAPLUS

DOCUMENT NUMBER: 97:19001

TITLE: Experimental seed treatments for the control of wheat
bulb fly and slugs

AUTHOR(S): Scott, G. C.

CORPORATE SOURCE: Rothamsted Exp. Stn., Harpenden/Herts., AL5 2JQ, UK

SOURCE: British Crop Protection Conference--Pests and

Diseases, Proceedings (1981), 11th(2), 441-8

CODEN: PBCDDQ; ISSN: 0144-1612

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Of 12 exptl. pyrethroid seed treatments tested for

control of wheat bulb fly (*Delia coarctata*) in small plots of winter wheat, permethrin [52645-53-1] cypermethrin [52315-07-8], and NRDC 170 [55667-46-4] were the most effective. Permethrin performance was improved by the addition of a sticker, Me cellulose, or surfactant, Me benzoate. Permethrin remained effective at rates $\geq 0.00625\%$ /weight of seed in peaty loam, but not in clay loam soils. However, its effectiveness was greatly diminished by deep sowing. Yields from 11 trials showed that permethrin was at least as effective as chlorfenvinphos [470-90-6]. Of 12 other materials tested in small plots, microencapsulated ethyl parathion [56-38-2] and microencapsulated, fonofos [944-22-9] gave good results. In laboratory tests to exam. exptl. seed treatments for controlling slugs (*Deroceras reticulatum*) in winter wheat, effective compds. related to ioxynil [1689-83-4] or nereistoxin are described.

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L13 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1979:450947 CAPLUS

DOCUMENT NUMBER: 91:50947

TITLE: Experiments with fungicides and insecticides in agricultural crops 1977

AUTHOR(S): Hansen, Knud E.

CORPORATE SOURCE: Afproevnings Afd., Statens Plantepatol. Forsoeg, Den.

SOURCE: Tidsskrift for Planteavl (1978), 82(5), 571-86

CODEN: TPLAAV; ISSN: 0040-7135

DOCUMENT TYPE: Journal

LANGUAGE: Danish

AB Results from trials with 38 fungicides and 6 insecticides with cereals and other crops were reported. In field and greenhouse expts., barley leaf stripe (caused by *Drechslera graminiae*) was controlled by seed treatment with tillantin S [22577-66-8], imazalil [35554-44-0], panoctine plus [68315-78-6], and maneb [12427-38-2] at 4 dosages (1/4-2-fold standard). EL-228-10 and EL-228-7.5 also gave good results in small doses. Wheat bunt (caused by *Tilletia caries*) was controlled by seed treatment with Delsene 30 FL [10605-21-7] and BAS 35001 F [52080-81-6]. Stripe smut of rye (caused by *Urocystes ooculata*) was controlled by these compds., EL-228 [63284-71-9] bfn 7466 [67381-66-2], and Terra-Coat Zn 2055 [70746-91-7]. Barley eyespot (caused by *Cercospora herpotrichoides*) was controlled by Benlate [17804-35-2] but the yield was not increased. Powdery mildew (*Erysiphe graminis*) was controlled in wheat and brown rust (*Puccinia hordei*) in barley by Bayleton [43121-43-3] formulation with yield increases. Cutworms (*Scotia segetum*) were better controlled in a variety of crops with Nexion [2104-96-3] and Orthene [30560-19-1] than with folithion [122-14-5]. Multiple sprayings with these compds. and with pyrethroids Sumicidin [51630-58-1], Ambush [52645-53-1], and Tamaron [10265-92-6] gave the best results.

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L13 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1977:562725 CAPLUS

DOCUMENT NUMBER: 87:162725

TITLE: The effectiveness of pyrethroid seed treatment against soil pests of cereals

AUTHOR(S): Griffiths, David C.

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